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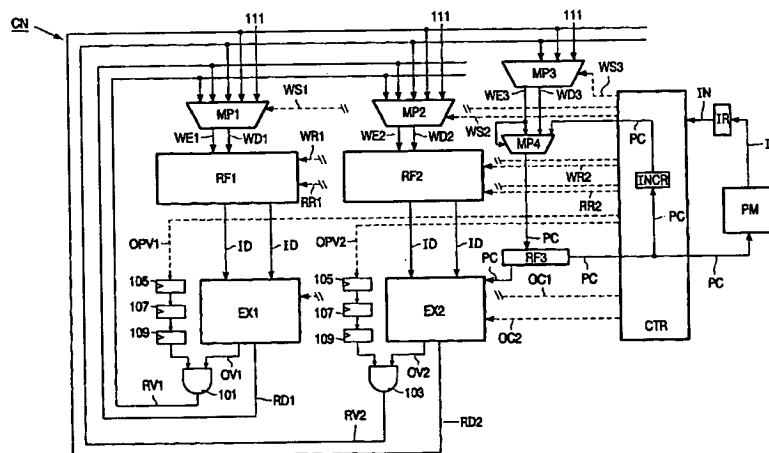
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(54) Title: ZERO OVERHEAD BRANCHING AND LOOPING IN TIME-STATIONARY PROCESSORS



(57) Abstract: Programmable processors are used to transform input data into output data based on program information encoded in instructions. The value of the resulting output data depends, amongst others, on the momentary state of the processor at any given moment in time. This state is composed of temporary data values stored in registers, for example, as well as so-called flags. A disadvantage of the principle of flags, is that they cause side effects in the processor, especially in parallel processors. However, when removing the traditional concept of flags, the remaining problem is the implementation of branching. A processing system according to the invention comprises an execution unit (EX1, EX2), a first register file (RF1, RF2) for storing data, an instruction memory (PM) and a second register file (RF3) for storing a program counter. The execution unit conditionally executes dedicated instructions for writing a value of the program counter into the second register file. As a result, the processing system according to the invention allows conditional branching, without the use of flags.



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